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10/049626  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Akihiko MARUYAMA et al.

Group Art Unit: Not Yet Assigned

Appl. No. : 10/049626  
(National Stage of PCT/JP00/05711)

Examiner: Not Yet Assigned

Filed : February 22, 2002  
(International Filing Date August 24, 2000)

For : METHOD OF DETECTING AND QUANTITATING MICROORGANISM  
HAVING SPECIFIC FUNCTION AND ITS GENE FROM NATURAL  
ENVIRONMENT, NOVEL 16sRrNA GENE DATA AND PROBES

**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner of Patents  
Washington, D.C. 20231

Sir:

In accordance with the duty of disclosure under 37 C.F.R. §1.56, §1.97-1.98, Applicants hereby direct the Examiner's attention to the following documents which are cited in the International Application, the International Search Report and/or the International Preliminary Examination Report issued in connection with International Application No. PCT/JP94/00938. Copies of the International Search Report in Japanese and English, and copies of the International Preliminary Examination Report in Japanese and English were enclosed with the papers when entering the National Stage on February 22, 2002. The Examiner is invited to review these materials to inspect the relevance indicated during international examination with respect to the documents cited therein.

P21989.A02

Geiselbrecht, A., et al., Applied and Environ. Microbiol. 64, pp. 4703-4710 (1998).

Dyksterhouse, S., et al., Int'l J. of Sys. Bacteriol. 45, pages 116-123 (1995).

Geiselbrecht, A., et al., Applied and Environ. Microbiol. 62, pp.3344-3349 (1996).

Japanese Laid Open Patent Publication No. HEI 10-155498 (English language Abstract enclosed) published June 16, 1998.

Walker, J., Marine Technology Society J. 18, pp. 73-86 (1984).

Haines, J., and Holder, E., In Situ and On-Site Bioremediation 4, pp. 419-424 (1997).

Japanese Laid Open Patent Publication No. 9-98771 (English language Abstract enclosed), published April 15, 1997.

Huu, N., et al., Int'l J. of Sys. Bacteriol. 49, pp. 367-375 (1999).

The following documents are cited and discussed in the specification as noted.

Swannell, R., et al., Microbiol. Rev. 60, pp. 342-365 (1996) is cited and discussed in the specification beginning at page 1, line 21.

Kodama, T., et al., "Small living creatures preserving the earth - Environmental microorganisms and bioremediation, Ghido Press (1995) is cited and discussed in the specification beginning at page 3, line 4.

Ishida, Y., and Hino, A., Restoration of Environment by Biological Function - Possibility of Bioremediation in Fisheries, Koseisha Koseikaku, pp. 9-21 (1996) is cited and discussed in the specification beginning at page 3, line 6.

Hobbie, J., et al., Applied Environ. Microbiol. 33, pp. 1225-1228 (1977) is cited and discussed in the specification beginning at page 20, line 5.

P21989.A02

Porter, K., and Feig, Y., *Limnol Oceanogr.* 25, pp. 943-947 (1980) is cited and discussed in the specification beginning at page 20, line 6.

Murray, M., and Thompson, W., *Nucleic Acid Res.* 8, pp. 4321-4325 (1980) is cited and discussed in the specification beginning at page 24, line 2.

Sambrook, J., et al., *Molecular Cloning*, 2nd Edition, pp. 14.1-14.35 (1989) is cited and discussed in the specification beginning at page 24, line 14.

Kaufman, D., and Evans, G., *BioTechniques* 9, pp. 304, 306 (1990) is cited and discussed in the specification beginning at page 24, line 17.

Saitou, N., and Nei, M., *Mol. Biol. Evol.* 4, pp. 406-425 (1987) is cited and discussed in the specification beginning at page 27, line 20.

Fitch, W., *Syst. Zool.* 20, pp. 406-416 (1971) is cited and discussed in the specification beginning at page 27, line 22.

Felsenstein, J., *J. Mol. Evol.* 17, pp. 368-376 (1981) is cited and discussed in the specification beginning at page 27, line 24.

Stackebrandt, E., and Goebel, B., *Int'l J. Sys. Bacter.* 44, pp. 846-849 (1994) is cited and discussed in the specification at page 29, line 6.

Higashihara, T., *Gekkan Kaiyo (Monthly Journal of Sea)* 30, pp. 613-621 (1998) is cited and discussed in the specification beginning at page 30, line 9.

Leahy, J., and Colwell, R., *Microbiol. Rev.* 54, pp. 305-315 (1990) is cited and discussed in the specification at page 30, line 13.

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Atlas, R., and Bartha, R., *Advances in Microbial Ecology* Vol. 12, pp. 287-338 (1992) is cited and discussed in the specification at page 30, line 14.

Noller, H., and Woese, C., *Science* 212, pp. 403-411 (1981) is cited and discussed in the specification at page 39, line 6.

Shimizu, U., and Tsukamoto, *Classification and Identification of Marine Bacteria, Marine Microorganisms and Biotechnology*, Gihodo Press, pp. 1-24 (1991) is cited and discussed in the specification at page 43, line 3.

Bergmans, H., and Gaastra, W., *Methods in Molecular Biology*, Chapter 28, pp. 385-390 (1983) is cited and discussed in the specification at page 44, line 3.

Grunstein, M., and Hogness, D., *PNAS* 72, pp. 3961-3965 (1975) is cited and discussed in the specification at page 44, line 6.

Southern, E., *J. Mol. Biol.* 98, pp. 503-517 (1975) is cited and discussed in the specification at page 44, line 8.

Amann, R., et al., *Microbiol. Rev.* 59, pp. 143-169 (1995) is cited and discussed in the specification at page 44, line 11.

Stahl, D., and Amann, R., *Nucleic Acid Techniques in Bacterial Systematics*, Chapter 8, pp. 205-248 (1991) is cited and discussed in the specification at page 44, line 20.

Japanese Patent Application No. 11-237818 is cited and discussed in the specification at page 47, line 2.

Dyksterhouse, S., et al., *Int'l J. Sys. Bacteriol.* 45, pp. 116-123 (1995) is cited and discussed in the specification at page 53, line 17.

P21989.A02

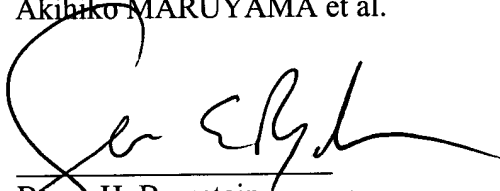
Button, D., et al., Applied and Environ. Micro. 64, pp. 4467-4476 (1998) is cited and discussed in the specification at page 57, line 18.

Amann, R., et al., J. Bacteriol. 172, pp. 762-770 (1990) is cited and discussed in the specification at page 59, line 20.

Applicants respectfully request that the Examiner consider the above materials and cite the patent documents. Copies of the above-noted documents are attached and have been listed on a PTO-1449 Form which is also attached hereto. Accordingly, the Examiner is requested to initial the appropriate spaces on the attached PTO-1449 Form and to return a copy of the Form to Applicants with the next official communication in the present application to confirm consideration of these documents.

Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully Submitted,  
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Form PTO-1449		U.S. Department of Commerce Patent and Trademark Office		Atty. Docket No. P21989		Serial No. 10/049,626	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)				Applicant Akihiko MARUYAMA et al.			
				Filing Date February 22, 2002		Group Not Known	
<b>U.S. PATENT DOCUMENTS</b>							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
<b>FOREIGN PATENT DOCUMENTS</b>							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	1 0	1 5 5 4 9 8	06/16/98	JAPAN			
		9 - 9 8 7 7 1	04/15/97	JAPAN			
	1 1	2 3 7 8 1 8	08/31/99	JAPAN			
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b> /							
	1	English Language Abstract of JP 10-155498.					
	2	English Language Abstract of JP 9-98771.					
	3	Geiselbrecht, A., et al., Applied and Environ. Microbiol. 64, pp. 4703-4710 (1998).					
	4	Dyksterhouse, S., et al., Int'l J. of Sys. Bacteriol. 45, pages 116-123 (1995).					
	5	Geiselbrecht, A., et al., Applied and Environ. Microbiol. 62, pp.3344-3349 (1996).					
	6	Walker, J., Marine Technology Society J. 18, pp. 73-86 (1984).					
	7	Haines, J., and Holder, E., In Situ and On-Site Bioremediation 4, pp. 419-424 (1997).					
	8	Huu, N., et al., Int'l J. of Sys. Bacteriol. 49, pp. 367-375 (1999).					
	9	Swannell, R., et al., Microbiol. Rev. 60, pp. 342-365 (1996).					
	1 0	Kodama, T., et al., "Small living creatures preserving the earth - Environmental microorganisms and bioremediation, Ghido Press (1995).					
	1 1	Ishida, Y., and Hino, A., Restoration of Environment by Biological Function - Possibility of Bioremediation in Fisheries, Koseisha Koseikaku, pp. 9-21 (1996).					
	1 2	Hobbie, J., et al., Applied Environ. Microbiol. 33, pp. 1225-1228 (1977).					
	1 3	Porter, K., and Feig, Y., Limnol Oceanogr. 25, pp. 943-947 (1980).					
	1 4	Murray, M., and Thompson, W., Nucleic Acid Res. 8, pp. 4321-4325 (1980).					
EXAMINER				DATE CONSIDERED			
*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

[illegible]

	1	5	Sambrook, J., et al., Molecular Cloning, 2nd Edition, pp. 14.1-14.35 (1989).
	1	6	Kaufman, D., and Evans, G., BioTechniques 9, pp. 304, 306 (1990).
	1	7	Saitou, N., and Nei, M., Mol. Biol. Evol. 4, pp. 406-425 (1987).
	1	8	Fitch, W., Syst. Zool. 20, pp. 406-416 (1971).
	1	9	Felsenstein, J., J. Mol. Evol. 17, pp. 368-376 (1981).
	2	0	Stackebrandt, E., and Goebel, B., Int'l J. Sys. Bacter. 44, pp. 846-849 (1994).
	2	1	Higashihara, T., Gekkan Kaiyo (Monthly Journal of Sea) 30, pp. 613-621 (1998).
	2	2	Leahy, J., and Colwell, R., Microbiol. Rev. 54, pp. 305-315 (1990).
	2	3	Atlas, R., and Bartha, R., Advances in Microbial Ecology Vol. 12, pp. 287-338 (1992).
	2	4	Noller, H., and Woese, C., Science 212, pp. 403-411 (1981).
	2	5	Shimizu, U., and Tsukamoto, Classification and Identification of Marine Bacteria, Marine Microorganisms and Biotechnology, Gihodo Press, pp. 1-24 (1991).
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	2	7	Grunstein, M., and Hogness, D., PNAS 72, pp. 3961-3965 (1975).
	2	8	Southern, E., J. Mol. Biol. 98, pp. 503-517 (1975).
	2	9	Amann, R., et al., Microbiol. Rev. 59, pp. 143-169 (1995).
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